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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/510,896

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Martin Dottling

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EXAMINER

AGHERA, SAMEER R

ART UNIT

PAPER NUMBER

2616

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/510,896	Applicant(s) DOTTLING ET AL.	
	Examiner Sameer Aghera	Art Unit 2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-32 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 16-32 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 October 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>8 October 2004</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed October 8th, 2004 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 16, 25, 28, 29, and 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berger (US 2003/0221156 A1) in view of Eriksson (US 2002/0167969 A1).

Berger discloses a method and apparatus for coding communication signals between stations comprising the following features: regarding **claims 16, 25, 29, and 31**, subdividing the data stream (see Figure 2, item 100) into at least one data block (see Figure 2, item 102) containing transmission bits for transmission (see Figure 2, item 108); forming the transmission bits from a coding process from input bits bearing

information (see "a data stream from a communications signal is encoded," Abstract and Figure 1, item 10); removing specific transmission bits (see "deleting at least one bit," Abstract) from a data block of the data stream (see "resulting coded data stream," Abstract) to match the data rate (see "desired data rate," Abstract); specifying, by a puncturing pattern (see "puncturing," Abstract), the transmission bits to be removed (see "multiple levels of puncturing," Abstract); and designing the puncturing pattern (see "level of puncturing," page 5, paragraph 38) such that transmission bits are removed which are dependent via the coding process (see "deletion is dependent upon the encoding algorithm to be used," page 5, paragraph 39) on few input bits (see "sensitive to the selection of which bits are deleted," page 5, paragraph 39). The Examiner notes that puncturing and repetition are interchangeable as shown in page 7, paragraph 72 of Eriksson; regarding **claim 28**, wherein the data block (see Figure 2, item 102) in which the rate matching (see "desired data rate," Abstract) is performed includes data coded with a convolution code (see "convolutional code," page 1, paragraph 9).

Berger does not disclose the following elements: regarding **claims 16, 25, 29, and 31**, wherein the puncturing pattern comprises: determining a cumulative puncturing strength which specifies which component of the information bits was removed from the data block by removal of transmission bits; forming a decision function depending on the cumulative puncturing strength; and minimizing the decision function to determine the puncturing pattern; regarding **claims 30 and 32**, wherein the communications device is one of a UMTS mobile radio transmitter and a UMTS mobile radio receiver.

Eriksson discloses a flexible layer one for radio interface to PLMN comprising the following features.

Regarding **claims 16, 25, 29, and 31**, determining a cumulative puncturing strength (see puncturing," page 7, paragraph 74) which specifies which component of the information bits was removed from the data block by removal of transmission bits (see "derived algorithmically based on the number bits before and after puncturing," page 7, paragraph 73); forming a decision function depending on the cumulative puncturing strength (see page 7, paragraphs 75 to 79); and minimizing the decision function to determine the puncturing pattern (see page 7, paragraphs 75 to 79). The Examiner notes that puncturing and repetition are interchangeable as shown in page 7, paragraph 72 of Eriksson.

Regarding **claims 30 and 32**, wherein the communications device is one of a UMTS mobile radio transmitter and a UMTS mobile radio receiver (see "UMTS," page 1, paragraph 4).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Berger with the features, as taught by Eriksson, in order to provide flexibility in configuration of layer one transport channels for producing radio blocks (see Eriksson page 3, paragraph 34).

4. Claims 17-24 and 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berger (US 2003/0221156 A1) in view of Eriksson (US 2002/0167969 A1), further in view of Yun (US 2004/0125765 A1).

Berger and Eriksson disclose all elements as applied to paragraph 3 above.

Berger and Eriksson do not disclose the following features: regarding **claim 19**, wherein the puncturing pattern uses a puncturing rate to specify a gap between the transmission bits to be removed, such that the puncturing rate differs for different areas in the data block; regarding **claim 20**, wherein the puncturing rate in a middle area of the data block features substantially equidistant gaps between the bits to be removed; regarding **claim 26**, wherein a repetition rate of the repetition pattern which specifies a gap between the bits to be repeated requires substantially equidistant gaps in a middle area of the data block and at an edge of the data block and requires gaps that are large enough for no bit to be repeated; regarding **claims 17, 18, 21-24, and 27**, various puncturing and repetitions sequences.

Yun discloses a rate matching method in a mobile communication system comprising the following features.

Regarding **claim 19**, wherein the puncturing pattern (see "puncturing pattern," page 6, paragraph 86) uses a puncturing rate (see "puncturing rate," page 9, paragraph 130) to specify a gap between the transmission bits to be removed, such that the puncturing rate differs for different areas in the data block (see Figure 10c).

Regarding **claim 20**, wherein the puncturing rate (see "puncturing rate," page 9, paragraph 130) in a middle area of the data block features substantially equidistant gaps between the bits to be removed (see Figure 15b).

Regarding **claim 26**, wherein a repetition rate (see "repetition rate," page 2, paragraph 30) of the repetition pattern (see "repetition pattern," page 2, paragraph 27)

which specifies a gap between the bits to be repeated requires substantially equidistant gaps in a middle area of the data block and at an edge of the data block and requires gaps that are large enough for no bit to be repeated (see Figure 15b).

Regarding **claims 17, 18, 21-24, and 27**, various puncturing and repetitions sequences (see Figures 8a through 15b). The Examiner does not see unexpected results by using the puncturing and repetition patterns as shown by the above claims.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Berger and Eriksson with the features, as taught by Yun, in order to provide rate matching in a mobile communication system (see Yun page 2, paragraph 26).

Conclusion

Examiner's Note: Examiner has cited particular columns and line numbers in the references applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

In the case of amending the claimed invention, Applicant is respectfully requested to indicate the portion(s) of the specification which dictate(s) the structure

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relied on for proper interpretation and also to verify and ascertain the metes and bounds of the claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sameer Aghera whose telephone number is 571-272-9744. The examiner can normally be reached on M-F 7:30 AM to 5 PM; Off every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kwang Yao can be reached on 571-272-3182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SA

Sameer Aghera



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